

Claims:

- 1 1. A distributed search method in a peer-to-peer computer network comprising a
2 resource requestor, at least one search broker, and at least one resource provider where said at
3 least one search broker has a registration database for said at least one resource provider, said
4 method comprising:
 - 5 sending a resource query from said resource requestor; to a resource broker;
 - 6 locating a resource provider on the network matching said resource query;
 - 7 sending said resource query from said resource broker to said resource provider matching
8 said resource query;
 - 9 processing said resource query at said resource provider matching said resource query;
 - 10 and
 - 11 returning search results from said resource provider matching said resource query to said
12 resource requestor.
- 1 2. The method of Claim 2 further comprising locating one or more search brokers in
2 said computer network.
- 1 3. The method of Claim 2 further comprising forwarding a resource description from
2 said resource provider to said resource broker.
- 1 4. The method of Claim 3 further comprising ranking said search results at said
2 resource requestor.
- 1 5. The method of Claim 4 wherein said resource description comprises types of
2 resources.
- 1 6. A computer program product for use in conjunction with a distributed network
2 comprising a resource requestor, at least one search broker and at least one resource provider, the
3 computer program product comprising a computer readable storage medium and a computer
4 program mechanism embedded therein, the computer program mechanism comprising:
 - 5 first instructions for sending a resource query executable by said resource requestor;

6 second instructions executable by said search broker for registering said resource

7 provider;

8 third instructions executable by said search broker for finding said resource provider
9 matching said resource query;

10 fourth instructions executable by said search broker for sending said resource query to
11 said resource provider; and

12 fifth instructions executable by said resource provider for finding resources available
13 matching said resource query.

1 7. The computer program product of Claim 6 further comprising

2 sixth instructions executable by said resource provider for sending search results to said
3 resource requestor.

1 8. The computer program product of Claim 7 further comprising

2 seventh instructions executable by said resource provider for finding search brokers in
3 said computer network.

1 9. The computer program product of Claim 8 further comprising

2 eighth instructions executable by said resource provider for obtaining a resource
3 description.

1 10. The computer program product of Claim 6 further comprising

2 ninth instructions executable by said resource provider for sending a resource query to a
3 computer coupled to said resource provider.

1 11. A resource search method for a computer network having a plurality of computers

2 comprising a resource requestor, at least one search broker, and at least one resource provider,
3 said method comprising:

4 registering said resource provider with said search broker;

5 sending a resource query from said resource requestor to said search broker;

6 sending said resource query from said search broker to said resource provider;

7 searching said resource provider for local resources based on said resource query; and

8 sending search results from said resource provider to said resource requestor.

1 12. The search method of Claim 11 further comprising
2 sending said resource query from said resource provider to a computer coupled to said
3 resource provider.

1 13. The search method of Claim 11 further comprising
2 generating at said search broker a registration database for said resource provider.

1 14. The search method of Claim 13 further comprising
2 determining whether said resource provider contains a resource that matches said
3 resource query.

1 15. The search method of Claim 14, wherein said resource query comprises
2 a keyword.

1 16. The search method of Claim 15 further comprising selecting said resource
2 provider based on said keyword of said resource query.

1 17. A computer program product for use in conjunction with a distributed network
2 comprising a resource requestor, at least one search broker and at least one resource provider, the
3 computer program product comprising a computer readable storage medium and a computer
4 program mechanism embedded therein, the computer program mechanism comprising:

5 first instructions for registering said resource provider with said search broker;
6 second instructions for sending a resource query from said resource requestor to said
7 search broker;

8 third instructions for sending said resource query from said search broker to said resource
9 provider;

10 fourth instructions for searching said resource provider for local resources based on said
11 resource query; and

12 fifth instructions for sending search results from said resource provider to said resource
13 requestor.

1 18. The computer program product of Claim 17 further comprising sixth instructions
2 for sending said resource query from said resource provider to a computer coupled to said
3 resource provider.

1 19. The computer program product of Claim 17 further comprising
2 sixth instructions for generating at said search broker a registration database for said
3 resource provider.

1 20. The computer program product of Claim 19 further comprising
2 seventh instructions for determining whether said resource provider contains a resource
3 matching said resource query.

1 21. The computer program product of Claim 20 wherein said resource query
2 comprises a keyword.

1 22. The computer program product of Claim 21 further comprising eighth instructions
2 for selecting said resource provider based on said keyword of said resource query.

1 23. The computer program product of Claim 22 further comprising ninth instructions
2 for ranking said search results at said resource requestor.

1 24. A computer network having a plurality of computers comprising a resource
2 requestor, at least one search broker, and at least one resource provider, each computer on said
3 computer network comprising an application programming interface (API), said API comprising;
4 a resource-finding method executable by said resource requestor, said resource-finding
5 method comprising a resource query;
6 a resource-provider-finding method executable by said search broker for finding said
7 resource provider matching said resource query,
8 a resource-provider-registering method executable by said search broker for registering
9 said resource provider; and
10 a local-resource-finding method executable by said resource provider for finding

11 resources available on said resource provider.

1 25. The computer network of Claim 24 wherein said API further comprising:
2 a search broker finding method executable by said resource provider for finding said
3 search broker.

1 26. A resource search method for a computer network having computers comprising a
2 resource requestor, a plurality of search brokers, and a plurality of resource providers, said
3 method comprising:

4 registering said plurality of resource providers with said plurality of search brokers;
5 sending a resource query from said resource requestor to at least a subset of said plurality
6 of search brokers;

7 sending said resource query from said subset of said plurality of search brokers to at least
8 a subset of said plurality of resource providers;

9 searching for local resources based on said resource query; and
10 sending search results from said subset of said plurality of resource providers to said
11 resource requestor.

1 27. The search method of Claim 26 further comprising
2 sending said resource query from a resource provider to a computer coupled to said
3 resource provider.

1 28. The search method of Claim 26 further comprising
2 generating at said plurality of search brokers registration databases for said plurality of
3 resource providers.

1 29. The search method of Claim 28 further comprising
2 determining whether said subset of said plurality of resource providers contains a
3 resource that matches said resource query.

1 30. The search method of Claim 29, wherein said resource query comprises
2 a keyword.

1 31. The search method of Claim 30 further comprising selecting a resource provider
2 based on said keyword of said resource query.

1 32. A computer program product for use in conjunction with a distributed network
2 comprising a resource requestor, a plurality of search brokers and a plurality of resource
3 providers, the computer program product comprising a computer readable storage medium and a
4 computer program mechanism embedded therein, the computer program mechanism comprising:
5 first instructions for registering said plurality of resource providers with said plurality of
6 search brokers;

7 second instructions for sending a resource query from said resource requestor to at least a
8 subset of said plurality of search brokers;

9 third instructions for sending said resource query from said subset of said plurality of
10 search brokers to at least a subset of said plurality of resource providers;

11 fourth instructions for searching for local resources based on said resource query; and
12 fifth instructions for sending search results from said subset of said plurality of resource
13 providers to said resource requestor.

1 33. The computer program product of Claim 32 further comprising sixth instructions
2 for sending said resource query from a resource provider to a computer coupled to said resource
3 provider.

1 34. The computer program product of Claim 32 further comprising
2 sixth instructions for generating at said plurality of search brokers registration databases
3 for said plurality of resource providers.

1 35. The computer program product of Claim 34 further comprising
2 seventh instructions for determining whether said subset of said plurality of resource
3 providers contains a resource that matches said resource query.

1 36. The computer program product of Claim 35 wherein said resource query
2 comprises a keyword.

1 37. The computer program product of Claim 36 further comprising eighth instructions
2 for selecting a resource provider based on said keyword of said resource query.

PATENT DRAWINGS